

REMARKS

Reconsideration of the issues raised in the above referenced Office Action is respectfully solicited.

The objection to the drawings under 37 CFR §1.83(a) as not showing the length and thickness recited in Claim 3 has been considered. The feature recited in amended Claim 3 is illustrated in Applicants' Figure 1 wherein portions of the hollow rotor shaft 41 extend from end face 45A to end face 45B, which almost equals the thickness (distance) between the bottom faces of the insertion recesses. Thus amended Claim 3 clearly corresponds to Figure 1. Therefore, withdrawal of the objection to the drawing is respectfully requested.

The rejection of Claims 1, 6, 7, 12 and 13 under 35 USC §102(b) as being anticipated by Stratienko, U.S. Patent No. 4 125 790 has been considered.

Stratienko discloses a mechanical disconnect assembly for rapid disengagement of an electric motor from a gear or shaft system. The disconnect assembly is intended for use with the opening and closing of a valve.

Attachment A, provided herewith for purposes of illustration, is Figure 1B of Stratienko. Figure 1B shows a motor housing 15 containing a motor stator assembly 16 and a rotor assembly 16A therein. Figure 1B also shows a rotatable shaft 17 and a hollow spreading rod 26 that project outwardly from the internal wall section 31 and internal web surface 30 of the housing. The motor housing 15 has a generally cylindrical shape except at the internal wall section 31 and the internal web surface 30.

The Office Action considers the web surface 30 and wall section 31 to correspond to Applicants' claimed end plates. The Office Action considers the spreading rod 26 of Stratienko to be a rotor shaft with a portion of both ends being exposed from first and second housing through holes. In the Office Action, areas labeled A and B in Figure 1B of Attachment A apparently are intended to represent the first and second workpiece insertion recesses recited in Applicants' claims.

Applicants' amended Claim 1 recites "first and second workpiece insertion recesses formed in outer surfaces of the first and second end plate portions of the motor housing". As discussed above, these recesses correspond to reference numerals A and B as labeled in the Attachment A drawing of Stratienko.

Applicants' Claim 1 further recites that "the first and second workpiece insertion recesses are formed with a fixed depth in central areas containing the housing through holes" and "in areas extending in a radially same direction to external peripheral edges of the end plate portions continuously with the central areas on the outside surfaces of the end plate portions". Stratienko shows a projection labeled C on Attachment A that extends about the entirety of the hole for the rotor shaft 17. Thus, Stratienko does not disclose an insertion recess in a central area containing a housing through hole. Instead, the recess labeled B is spaced from the housing hole.

Further the recesses labeled A, B in Figure 1B of Stratienko do not extend to the external peripheral edges of the end plate portions as recited in Claim 1. Instead, lips labeled D, E in Attachment A formed at the peripheral edges of the wall section 31 project outwardly and lips labeled F, G formed at the periphery of the web surface 30 also project outwardly.

Further, Claim 1 recites that "the end plate portions have a reduced thickness at the workpiece insertion recesses". In Attachment A, the element labeled K shows a part of an end plate portion of Stratienko having a greater thickness such that point H labeled in Attachment A represents a part of an insertion recess as described in the Office Action that has an "increased" thickness.

Applicants' Figure 1 illustrates recesses 24, 25 extending radially from the peripheral edges at the top portions of the respective end plates to the through holes 22A, 23A. As discussed above, in Stratienko, at the top of

Figure 1B shown on Attachment A, lips D, E are formed that do not permit the recess B to extend to the peripheral edge of the wall section 31. Further, lips labeled F, G in Figure 1B do not permit the recess A to extend to the periphery at web surface 30.

Due to the lips D, E shown in Figure 1B of Attachment A, Stratienko does not provide a recess extending from a central area radially to an outer periphery portion. Thus a workpiece cannot, along the radial direction of the claimed motor shaft and end plates, access a tool mounted at the exposed ends of a tool-mounting hole located at the center of the end plates.

Moreover, Applicants' claimed recesses are formed with a reduced thickness so as not to increase the axial length of the motor housing, whereas the elements labeled D, E, F, G of Stratienko are formed outwardly in the axial direction to increase the thickness or axial length of the housing as shown in Attachment A.

For the above reasons, reconsideration and allowance of Claim 1 is respectfully requested.

Independent Claim 6 recites a servo motor having a tubular motor housing with first and second flat end plates closing outer sides thereof.

Claim 6 further recites "a hollow rotor shaft located within respective planes defined by the parallel outer end surfaces of said first and second end plates" and recites a tool-mounting hole extending axially through a center thereof. Stratienko discloses a hollow rotary shaft 17 that extends beyond the web surface 30 and the wall section 31 of the housing. Therefore, this feature distinguishes Stratienko.

Further, Claim 6 recites a "first workpiece insertion recess extending radially from said central aperture to an outer periphery of said first end plate" and "a second workpiece insertion recess formed in an external surface of said second end plate, said second workpiece insertion recess extending radially from said central aperture to an outer periphery of said second end plate".

As discussed above, in Stratienko internal wall section 31 has a projecting area labeled C as shown on Attachment A that extends about a central opening that receives the rotatable shaft 17 and has an outwardly projecting peripheral lip labeled D, E. Thus, Stratienko does not disclose or suggest a recess extending from a central aperture to an outer periphery of either a first end plate or a second end plate.

Applicants' Claim 7 further recites that "the axial length of said rotor shaft is less than the radius of said rotor shaft". The shaft 17 and spreading rod 26 illustrated in Figure 1B of Stratienko both have a length that is much greater than the radius of the housing 15. Thus, Claim 7 further distinguishes Stratienko.

For the above reasons, independent Claim 6, along with Claims 7, 12 and 13 dependent therefrom, distinguish Stratienko.

The rejection of Claims 2 and 8 under 35 USC §103 as being unpatentable over Stratienko in view of Lutz, U.S. Patent No. 5 982 063, has been considered. Lutz does not address the limitations recited in Claims 1 and 6 that distinguish Stratienko. Therefore Claims 2 and 8 are believed allowable for the reasons set forth above with respect to parent Claims 1 and 6.

The rejection of Claim 3 under 35 USC §103 as being unpatentable over Stratienko in view of Burrus, U.S. Patent No. 2 364 599, has been considered. Burrus does not address the distinguishing limitations recited in parent Claim 1. Therefore Claim 3 is believed allowable for the reasons set forth above with respect to Claim 1.

The rejection of Claims 4 and 11 under 35 USC §103 as being unpatentable over Stratienko in view of Sato, U.S. Patent No. 5 770 900, has been considered. Claims 4 and 11 are believed allowable for the reasons set forth above with respect to parent Claims 1 and 6. Therefore, allowance of Claims 4 and 11 is respectfully requested.

The rejection of Claims 5, 9 and 10 under 35 USC §103 as being unpatentable over Stratienko in view of Fukuda, U.S. Patent No. 6 424 061, has been considered. Fukuda does not address the deficiencies of Stratienko with respect to parent Claims 1 and 6. Therefore Claims 5, 9 and 10 are believed allowable for the reasons set forth above with respect to parent Claims 1 and 6.

Claims 14-18 have been added.

Claim 14 further recites that the "rotor shaft is entirely within said motor housing". As shown in Figure 1B of Attachment A, Stratienko includes a rotor shaft 17 extending outwardly beyond the web surface 30 and the wall section 31. Therefore Claim 14 distinguishes Zagami.

Claim 15 is believed allowable for the reasons set forth above with respect to Claim 6.

Applicants' independent Claim 16 recites a flat hollow brushless servo motor including a "hollow rotor shaft positioned within said motor housing and between said first and second end plates". As discussed above, Stratienko discloses a rotary shaft 17 projecting outwardly from both ends of a housing.

Applicants' Claim 16 further recites first and second workpiece insertion recesses that extend radially from a central aperture to an outer periphery of the respective end plates. As discussed above, in Stratienko the internal wall section 31 has a recess labeled B on Attachment A that does not extend to the central aperture due to the outwardly projecting element C and that does not extend to the outer periphery of the wall section 31 due to the upwardly projecting element labeled D, E.

For the above reasons, independent Claim 16, and Claims 17 and 18 dependent therefrom, are believed allowable over Stratienko and the cited prior art.

Dependent Claim 17 further recites that "an axial length of said tubular motor housing is less than a radius of each said circular shaped plate". As illustrated in Attachment A,

the axial length of the motor housing 15 of Stratienko is clearly greater than the radius of either web 30 or wall section 31 illustrated in Figure 1B. Therefore, Claim 17 distinguishes over the prior art.

Applicants' Claim 18 recites that the "first and second end plates have a reduced thickness at the workpiece insertion recesses". Stratienko discloses different thicknesses at C, E as shown on Attachment A that do not have a reduced thickness and also do not define an insertion recess as recited in Applicants' Claim 18. Therefore Claim 18 distinguishes Stratienko.

Further and favorable reconsideration is respectfully solicited.

Respectfully submitted,



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Encl: Attachment A
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